

FORENSIC MEDICINE: THE STORY, CLINICAL NEXUS AND CHALLENGES OF THE PRACTICE IN NIGERIA

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BACKGROUND

The synonym of forensic medicine is forensic pathology^{1,2}. Also called legal medicine or medical jurisprudence³. Forensic medicine is a field that involves collection and analysis of medical evidence (samples) to produce objective information for use in the legal system^{2,3}. It can therefore be aptly summed as the science that deals with the application of medical knowledge to legal questions. It is also extremely useful in cases where a patient dies without having made a definitive diagnosis². The primary tool of forensic medicine has always been the autopsy². Frequently used for identification of the dead, autopsies may also be conducted to determine the cause of death². In cases of death caused by a weapon, for example, the forensic pathologist - by examining the wound - can often provide detailed information about the type of weapon used as well as important contextual information.

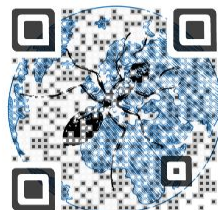
In a death by gunshot, for example, he can determine with reasonable accuracy the range and angle of fire. Forensic medicine is a major factor in the identification of victims of disaster, such as landslide or plane crash⁴. In cause-of-death determinations, forensic pathologists can also significantly affect the outcome of trials dealing with insurance and inheritance⁵.

Though the autopsy is performed by a forensic pathologist or a medical examiner, particularly during the investigation of criminal law cases and civil law cases in some jurisdictions², Coroners and medical examiners are also frequently asked to confirm the identity of a corpse. The scope of modern day forensic medicine has expanded far beyond autopsies to include exciting subjects of forensic anthropology; forensic odontology; forensic entomology; ballistics, fingerprint, crime scene and blood spatter analysis; toxicology; DNA; arson and fire investigation; evaluation of the sexual assault victim; forensic psychiatry (which is used to determine the mental health of an individual about to stand trial, and thus, his blameworthiness) and more^{1,2}. It is therefore instructive that the forensic medical services cut across all specialities of medicine with the primary areas of medicine that are commonly involved and harnessed in forensic medicine practice being anatomy, pathology, and psychiatry.

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To render efficient and effective forensic services in any setting, the forensic pathologist works with a number of support staff including: accident scene investigator; autopsy technician; coroner; forensic investigator; legal consultant; trauma, emergency medicine or psychiatric nurse; sexual assault nurse examiner; social services investigator and/or advocate and more².

HISTORICAL PERSPECTIVE

The history of Forensic science i.e. applying "scientific" principles to legal questions is long and intriguing. Notable examples of its evolutionary timeline include:

In 44BC following the assassination of Julius Caesar the attending physician, Antistius proclaimed that of the 23 wounds found on the body 'only one' was fatal. In the 5th century Germanic and Slavic societies were believed to be the first to put down in statute that medical experts should be employed to determine cause of death. In 1247, the first textbook on forensic medicine was published in China which among other things documented the procedures to be followed when investigating a suspicious death. In medieval England, pressure from the church halted the practice of hanging women thought to be pregnant. A convicted woman could escape the death penalty if she 'pleaded her belly' providing a physician could prove that she was in fact pregnant. The use of medical testimony in law cases predates by more than 1,000 years the first systematic presentation of the subject by the Italian Fortunato Fideli in 1598^{1,2,6,7}.

Inspired by the study of anatomy, medicolegal textbooks began to appear by the end of the 16th century. In German-speaking Europe, lectures on forensic pathology were regularly held in Freiburg in the mid-18th century and Vienna in 1804. Scientists like Auguste Ambroise Tardieu, Johann Ludwig Casper and Carl Liman made great effort to develop forensic pathology into a science based on empirics. Medical jurisprudence had a chair founded at the University of Edinburgh in 1807, first occupied by Andrew Duncan, the younger. It was imposed on the university by the administration of Charles James Fox, and in particular Henry Erskine working with Andrew Duncan, the elder⁷.

The 1877 coroners' act ensured that an integral part of the coroners' role was to determine the circumstances and the medical causes of sudden, violent and unnatural deaths. In 1932, chair of legal medicine at Harvard was established. Forensic pathology was first recognized in the United States by the American Board of Pathology in 1959⁸. In Canada, it was formally recognized in 2003, and a formal training program (a fellowship) is currently

being established under the auspices of the Royal College of Physicians and Surgeons of Canada⁹.

Forensic medicine was recognized as a specialty early in the 19th century. In the 19th century, two other forensic specialties arose, namely, forensic psychiatry (which is used to determine the mental health of an individual about to stand trial, and, thus, his blameworthiness) and forensic toxicology. The forensic toxicologist gives evidence on such topics as intentional poisoning and drug use. The toxicologist plays an increasingly important role in matters of industrial and environmental poisoning⁷.

The story in Africa and Nigeria is very sketchy in the literature. However, what is sure is that there has been paucity of forensic medicine practice as a well-defined subspecialty across the continent. Though anatomic pathologist has been in practice in several countries of Africa in the past couple of decades of medical practice, only few has had formal training and indeed practiced forensic medicine in the real time sense.

SCOPE AND PRACTITIONERS

This is a broad and very active field of study covering topics that include: forensic pathology; forensic anthropology (identification and investigation of human remains); forensic odontology (dental evidence); forensic entomology (insect evidence); ballistics, fingerprint, crime scene and blood spatter analysis; toxicology; DNA; arson and fire investigation; evaluation of the sexual assault victim and more^{1,2}.

Forensic pathologists, or medical examiners, are specially trained physicians who examine the bodies of people who died suddenly, unexpectedly or violently. The forensic pathologist is responsible for determining the cause (the ultimate and immediate reasons for the cessation of life) and manner of death (homicide, suicide, accidental, natural or unknown). After their basic medical training, they undertake 4-5 years of experience in pathology residency program. They usually have extensive medical and pathology knowledge, expertise in the collection of forensic evidence and giving forensic testimony, comfort with autopsy procedures, knowledge of laboratory methods. In addition to anatomy, the forensic pathologist may draw upon specialized knowledge and training in firearms/ballistics and trace evidence.

A city, county or state may appoint a forensic pathologist to act as a medical examiner. Clinical forensic pathologists examine living patients, usually in cases where sexual assault or abuse is suspected. Once all the evidence is analysed, the

forensic pathologist prepares a written report and may also testify to these findings in court.

Some forensic pathologists work for the city, county or federal government, while others work in hospitals, medical schools or with a private or group practice which contract autopsy services to government agencies.

Forensic pathologists spend most of their time in the lab, performing autopsies or examining tissue samples under the microscope. This can involve standing for extended periods and working with small tools. A typical workday can last 10 to 12 hours or longer, particularly if the forensic pathologist must examine a distant death site. Part of the workday also may include writing official reports and making court appearances.

The physical demands are not great, but over time, the forensic pathologist may become emotionally affected by continual exposure to graphic violence.

Becoming a forensic pathologist is quite tasking. It takes years of education and training after high school to become a forensic pathologist. It also takes a strong stomach because it can be a gruesome, smelly and disgusting job. And you need to have a lot of confidence in order to defend your conclusions in the face of opposition from lawyers, the media and even the victims' families.

The forensic Pathologist is assisted by support staff with clear cut roles as listed in the concluding segment of the background.

THE NEXUS

Forensic medicine is a science of applying medical facts to legal problems. Routine tasks include filling out birth and death certificates, deciding insurance eligibility, and reporting infectious disease. Perhaps more significant is medical testimony in court. When merely relating observations, doctors are ordinary witnesses; interpreting facts based on medical knowledge makes them expert witnesses, required to present their opinions without bias toward the side that called them. Conflicts between medicine and law can occur, usually over medical confidentiality.

It is typically involved in cases concerning blood relationship, mental illness, injury, or death resulting from violence. Autopsy is often used to determine the cause of death, particularly in cases where foul play is suspected. Post-mortem examination can determine not only the immediate agent of death (e.g. gunshot wound, poison), but may also yield important contextual information, such as how long the person has been dead, which can help trace the killing^{2,4}. Forensic medicine has also become increasingly important in cases involving rape. Modern techniques use such specimens as semen, blood, and hair samples of the criminal

found in the victim's bodies, which can be compared to the defendant's genetic makeup through a technique known as DNA fingerprinting; this technique may also be used to identify the body of a victim^{4,10}. The establishment of serious mental illness by a licensed psychologist can be used in demonstrating incompetency to stand trial, a technique which may be used in the insanity defence, albeit infrequently¹¹.

Forensic pathologists work closely with the coroner (England and Wales) or medical examiner (United States)^{1,2}. The examination of dead bodies (autopsy or post mortem) is a subset of anatomical pathology. Often times, a coroner or medical examiner has a background in pathology.

Forensic medicine is often used in civil cases. The cause of death or injury is considered in settling insurance claims or medical malpractice suits, and blood tests often contribute to a court's decision in cases attempting to determine the paternity of a child. The forensic pathologist studies the medical history, evaluates crime scene evidence including witness statements and deplores modalities that have been outlined above in determining the identity of a victim and the time, manner and cause of death^{2,4,10}.

They also ensure that procedures regarding evidence collection are followed, and coordinate their work with law enforcement operations.

CHALLENGES OF THE PRACTICE IN NIGERIA

Despite the huge role ascribed to forensic medicine, it has not been widely domesticated in our practice in Nigeria. There are a litany of challenges militating against the widespread use and practice. These varies from paucity of trained forensic pathologists and allied staff, the lack of facilities and equipment to deal with all the ambits of forensic medicine, sociocultural aversion and impediments, financial constraints and religious objections. In addition, the Nigeria legal system is still very sketchy on the practice of forensic medicine, and indeed the old and outdated act of the 1950's is still operational in Nigeria.

Those involved in the academic aspects of forensic medicine and related specialties will be aware of the relative lack of funding for research. This lack of funding research is often made worse by lack of trained or qualified personnel to undertake day-to-day service work. This contrasts more with the mainstream specialties (e.g., cardiology and gastroenterology), where the pharmaceutical industry underpins and supports research and development.

FUTURE

Forensic work is now truly multi professional, and an awareness of what other specialties can contribute is an essential part of basic forensic education, work, and continuing professional development. However, clinical forensic medicine continues to develop to support and enhance judicial systems in the proper, safe, and impartial dispensation of justice. A worldwide upsurge in the need for and appropriate implementation of human rights policies is one of the drivers for this development, and it is to be hoped that responsible governments in Nigeria and other world bodies will continue to raise the profile of, invest in, and recognize the absolute necessity for independent, impartial skilled practitioners of clinical forensic medicine. The need for reform of legal system and acts regulating the practice is highly recommended for urgent attention.

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